

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA**

IN RE STATIC RANDOM ACCESS)	Case No. M:06-CV-01819-CW
MEMORY (SRAM) ANTITRUST)	
LITIGATION)	MDL No. 1819
)	
This Document Relates To:)	CONSOLIDATED CLASS
)	ACTION COMPLAINT
)	
ALL DIRECT)	DIRECT PURCHASER CLASS
PURCHASER ACTIONS)	
)	JURY TRIAL DEMANDED

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1 Plaintiffs, by their undersigned attorneys, individually and on behalf of the class
2 described below, bring this class action against Defendants for damages under the antitrust laws
3 of the United States. Plaintiffs are direct purchasers and allege that Defendants conspired to
4 fix, raise, maintain, and stabilize the price of Static Random Access Memory ("SRAM") sold in
5 the United States during the class period defined below. As a result of Defendants' unlawful
6 conduct, Plaintiffs and members of the proposed Class paid higher prices for SRAM than they
7 would have paid in a competitive market.
8

9 I. OVERVIEW OF THE ACTION

10
11 1. "There is old saying in Korea that 'you will never lose if you know yourself and
12 the other party.'" As confirmed by Defendants' own documents, this was a guiding principle in
13 the SRAM industry from at least as early as 1996 and continuing through 2005. During this
14 period, the Defendants in this action violated the antitrust laws of the United States by entering
15 into agreements about pricing and production of SRAM. Defendants did so in order to fix and
16 maintain prices for SRAM at artificially high levels. At times, the Defendants referred to their
17 price-fixing conspiracy as the "pricing game."
18

19
20 2. As a result of this conduct by Defendants, Plaintiffs and the class suffered
21 damages as they were forced to pay higher prices for SRAM than they would have paid but for
22 Defendants' collusive conduct.

23 3. The following Defendants participated in this price-fixing conspiracy:

- 24 • Cypress Semiconductor, Inc.;
- 25 • Etron Technology, Inc.;
- 26 • Etron Technology America, Inc.;
- 27
- 28

- Hitachi, Ltd.
- Hitachi America, Ltd.
- Hynix Semiconductor, Inc.;
- Hynix Semiconductor America, Inc.;
- Integrated Silicon Solution, Inc.;
- Micron Technology, Inc.;
- Micron Semiconductor Products, Inc.
- Mitsubishi Electric Corporation;
- Mitsubishi Electric & Electronics USA, Inc.;
- Mosel Vitelic, Inc.;
- Mosel Vitelic Corporation
- NEC Electronics Corporation;
- NEC Electronics America, Inc.;
- Renesas Technology Corporation;
- Renesas Technology America, Inc.;
- Samsung Electronics Company Ltd.;
- Samsung Electronics America;
- Samsung Semiconductor, Inc.
- Toshiba Corporation;
- Toshiba America, Inc.; and
- Toshiba America Electronic Components, Inc.

1
2 4. These Defendants entered into an agreement to raise prices for SRAM, to
3 maintain prices for SRAM, and to reduce production of SRAM. These Defendants took steps
4 in furtherance of this agreement, and took steps to insure compliance with the agreement by the
5 various Defendants.
6

7 5. The primary purpose of the conspiracy was to fix and raise the price of SRAM.
8 In furtherance of the conspiracy, the Defendants knowingly authorized, requested, and
9 consented to the participation of their employees in the conspiracy in the respects described
10 below. The Defendants exchanged information about their present and future pricing of SRAM
11 to be sold to certain customers. Defendants understood that the exchange of competitor pricing
12 information was part of a *quid pro quo*. Defendants knew that the consequence of providing
13 and sharing pricing information with competitors would be to stabilize or raise the price of
14 SRAM sold to customers.
15
16

17 6. Despite the fact that they had entered into and took steps to further and police
18 their agreement, the Defendants made affirmative misrepresentations that conditions in the
19 SRAM market were due to competitive factors, rather than Defendants' price-fixing conspiracy.
20 Defendants never disclosed to Plaintiffs or the public that they were engaged in a price-fixing
21 conspiracy.
22

23 7. These Defendants carried out this conspiracy through, among other means:
24

- 25 • Face-to-face meetings with competitors to (i) communicate about pricing
26 to customers, including specific prices; (ii) communicate with
27 competitors about general market conditions, including pricing, supply,
28

1 demand, capacity and production; (iii) exchange product roadmaps; (iv)
2 agree to reduce supply, and (v) insure compliance with and enforce the
3 agreement;

- 4
5 • Email communications with competitors to (i) communicate about
6 pricing to customers, including specific prices; (ii) communicate with
7 competitors about general market conditions, including pricing, supply,
8 demand, capacity and production; (iii) exchange product roadmaps; (iv)
9 agree to reduce supply, and (v) insure compliance with and enforce the
10 agreement; and
11
12 • Telephone communications with competitors to (i) communicate about
13 pricing to customers, including specific prices; (ii) communicate with
14 competitors about general market conditions, including pricing, supply,
15 demand, capacity and production; (iii) exchange product roadmaps; (iv)
16 agree to reduce supply, and (v) insure compliance with and enforce the
17 agreement.
18

19
20 8. As part of this agreement, these Defendants shared information about the prices
21 they were charging customers for SRAM, anticipated price changes, and anticipated production
22 changes. As part of this agreement, these Defendants set prices to be charged for SRAM at
23 artificially high levels, and then took steps to insure that all Defendants complied with these
24 agreements.
25

26 9. The agreement was arrived at and condoned by high level executives of each
27 company, and was carried out by senior management at each company following the direction
28 and instructions of the high level executives who had entered into the agreement.

1 10. During the relevant period, Defendants participated in a conspiracy in the
2 manner described below, which conspiracy existed in the United States and elsewhere among
3 certain SRAM producers and their officers and employees. The primary purpose of the
4 conspiracy was to raise the price of SRAM sold throughout the United States and elsewhere.
5 The conspiracy directly affected SRAM customers in the United States. In furtherance of the
6 conspiracy, Defendants knowingly authorized, requested and consented to the participation of
7 one or more employees in the conspiracy in the respects described below. The employees
8 obtained from competitors the future pricing information of the competitors for SRAM to be
9 sold in the United States. Defendants understood that this competitor pricing information was
10 sometimes obtained by the employees in exchange for providing their own pricing information
11 for SRAM. Defendants knew that the consequence of providing this information to other
12 competitors pricing decision-makers would be to stabilize or raise the price of SRAM sold in
13 the United States and elsewhere.
14

15
16
17 11. Evidence of Defendants' price-fixing conspiracy is abundant. Just a few
18 examples are:

- 19 • A series of emails beginning in December 1998, in which Dennis Lee
20 (Hitachi) wrote J.B. Ra (Samsung), requesting "October and November
21 revenue and ASP [average selling price] by device type. . . ." In return,
22 Lee included Hitachi's information. In February 1999, Lee again wrote
23 J.B. Ra. In the e-mail, which was titled, "Time for the monthly update. .
24 . ." Lee wrote: "Got some information for you and would like the same
25 from you." Lee included pricing and volume/inventory information for
26 slow SRAM, fast SRAM, and PSRAM.
27
28

Hi JB:

Got some information for you and would like the same from you:

	Hit	Tosh	Samsung
8Kx8 slow	40K@2.6	0	
266K slow	300K@1.50	300K@1.15	
128Kx8 slow	200K@2.75	300K@1.65	
256Kx8 slow	0	300K@2.10	
512Kx8 slow	825K@3.00	60K@7.05	
256Kx16 slow	0	30K@7.05	
PSRAM	70K@7.25	110K@7.25	
256K fast	10K@7.00	0	
1M (x1, x4)			
1M (x8, x16)		150K@2.75	
1M (x9, x18)		7K@1.5 (used to be 15K)	
1M total	60K@5.00		
4M (x1, x4)			
4M (x8, x16)			
4M total	75K@15.00	25K@13.80	

Thank you in advance for your help.

By the way, I remember you mentioned that 4M slow was tight. any particular package?

Dennis

In October 1999, John Bugee (Samsung), in an internal e-mail, discussed pricing for a customer, based on information he received from Micron:

"YH stopped by this afternoon to discuss the following: 1) he asked if we have finalized the price with [customer]. My response was no, we were going to discuss internally to see if we can make a move on price (flat or only up slightly). The key reason is that our competition is not making any mid-month adjustment (Micron confirmed this afternoon)."

- In November 2000, representatives from Hynix, IDT, Micron, Mitsubishi and Cypress, among others, met in Bordeaux, France: "The goals for this meeting are for the site/regions to present an overview of your respective business; exchange individual points of view on market conditions; define foundation together to build a global memory commodity strategy.

1 . . . On the November 15th, STM, IDT, Micron and Mitsubishi will
2 present their product road maps in detail." Cypress was also scheduled
3 to present its roadmap, and Ken Heller, Director of Sales – Eastern Area
4 for Hynix, was scheduled to present Hynix's roadmap.

- 5
6 • In February 2003, Mark D'Arcangelo (Hitachi) sent an e-mail to Jack
7 Truong (Samsung), asking, "Are you willing to exchange roadmaps
8 again?" Truong sent D'Arcangelo Samsung's fast SRAM roadmaps.
9 D'Arcangelo responded by sending Hitachi's roadmap: "Here's ours.
10 I'm embarrassed to send you our (1) pager versus your (10) pages, oh
11 well. Regarding lunch, maybe next week is better. How about next
12 Wednesday 2/12."

13
14
15 12. The Defendants behaved as if the antitrust laws did not apply to them. An
16 example which demonstrates the blatant disregard with which defendants viewed prohibitions
17 against price-fixing is a May 29, 2001 email exchange between a Hynix marketing executive
18 and Micron's marketing department to inquire about sharing SRAM market information: "I'm
19 Hyung-gu Kim. I'm SRAM Marketing Analyst, working for Hynix Semiconductor (former
20 Hyundai Electronics Industries). I want to share information about SRAM Memory with your
21 company. Do you know anyone in Micron who can be of help? Please send me E-mail or
22 Phone Number."

23
24
25 I'm Hyung-gu Kim. I'm SRAM Marketing Analyst, working for Hynix
26 Semiconductor(former Hyundai Electronics Industries).
27 I want to share information about SRAM Memory with your company.
28

1 Later that same day Tom Pawlowski, Micron's Strategic Memory Technical representative,
2 responded to Kim: "Mike Black is the most appropriate contact. He is in charge of strategic
3 marketing for SRAM products."

4
5 13. These are just *a few* examples of the direct evidence of the price-fixing
6 conspiracy.

7
8 14. To remedy the harm caused by the agreement entered into and carried out by
9 these Defendants, this lawsuit is brought as a class action on behalf of all persons and entities
10 who, during the period November 1, 1996 through December 31, 2005 (the "Class Period"),
11 purchased SRAM in the United States directly from Defendants or any subsidiaries or affiliates
12 thereof.

13 II. JURISDICTION AND VENUE

14
15 15. Plaintiffs bring this action to recover damages, including treble damages,
16 injunctive relief, costs of suit and reasonable attorneys' fees caused by Defendants' violations
17 of the Sherman Act, 15 U.S.C. § 1.

18
19 16. The Court has jurisdiction over the subject matter of this action pursuant to
20 Sections 4(a) and 16 of the Clayton Act, 15 U.S.C. § 15 and 26, and 28 U.S.C. § 1331 and
21 1337. Venue is proper in this district pursuant to Section 12 of the Clayton Act, 15 U.S.C. §
22 22, and 28 U.S.C. § 1391(b), (c) and (d) because a substantial part of the events giving rise to
23 Plaintiffs' claims occurred in this District, a substantial portion of the affected interstate trade
24 and commerce discussed below has been carried out in this District, and one or more of the
25 Defendants reside in this District.
26
27
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1 17. By virtue of their nationwide contacts and activities, Defendants (as defined
2 below) are subject to the jurisdiction of this Court. Alternatively, there is jurisdiction over
3 foreign Defendants pursuant to Federal Rule of Civil Procedure 4(k)(2).
4

5 III. PRODUCT OVERVIEW

6 18. SRAM is a type of volatile semiconductor memory chip that retains its contents
7 as long as power remains applied. SRAM is a higher performance memory than DRAM and is
8 used in a variety of applications, including servers, hard drives, mobile wireless technology,
9 modems, game consoles, and high-speed data caching. As used herein, the term SRAM
10 includes all types of static random access memory sold during the Class Period. For purposes
11 of this Complaint, SRAM excludes all types of DRAM sold during the Class Period, including
12 SDRAM.
13

14 IV. PLAINTIFFS

15
16 19. Plaintiff **Alexander Ma, d/b/a Network Systems Engineering Consulting**, is a
17 California company with its principal place of business in Cerritos, California. During the
18 Class Period Ma purchased SRAM directly from one or more Defendants.
19

20 20. Plaintiff **Alec Berezin** is a resident of the State of Ohio. During the Class Period
21 Berezin purchased SRAM directly from one or more Defendants.

22 21. Plaintiff **Westell, Technologies Inc.** is a Delaware corporation with its principal
23 place of business at 750 N. Commons Drive, Aurora, Illinois. During the Class Period Westell
24 purchased SRAM directly from one or more Defendants.
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V. DEFENDANTS

22. References made herein to any corporation include any predecessors, successors, parents, subsidiaries, affiliates and divisions of that corporation.

23. Defendant **Cypress Semiconductor, Inc.** ("Cypress") is a Delaware corporation, with its principal place of business at 198 Champion Court, San Jose, California 95134. During the Class Period Defendant Cypress Semiconductor, Inc. sold SRAM to customers throughout the United States.

24. Defendant **Etron Technology, Inc.** is a Taiwanese entity with its principal place of business at No. 6, Technology Road 5, Hsinchu Science Park, Hsinchu, Taiwan 30078. During the Class Period Defendant Etron Technology, Inc. sold SRAM to customers throughout the United States.

25. Defendant **Etron Technology America, Inc.** is a wholly owned and controlled subsidiary of Etron Technology, Inc. with its principal place of business at 3375 Scott Blvd. Suite 128, Santa Clara, California 95054. During the Class Period Defendant Etron Technology America, Inc. sold SRAM to customers throughout the United States.

26. Defendants **Etron Technology, Inc.** and **Etron Technology America, Inc.** are referred to collectively herein as "**Etron.**"

27. Defendant **Hitachi, Ltd.** is a business entity organized under the laws of Japan, with its principal place of business at 6-6, Marunouchi 1-chome, Chiyoda-ku, Tokyo, Japan 100-8280. During the Class Period Defendant Hitachi, Ltd. sold SRAM to customers throughout the United States.

1 28. Defendant **Hitachi America, Ltd.** is a wholly owned and controlled subsidiary
2 of Defendant Hitachi, Ltd. with its principal place of business at 50 Prospect Avenue,
3 Tarrytown, New York 10591. During the Class Period Defendant Hitachi America, Ltd. sold
4 SRAM to customers throughout the United States.
5

6 29. Defendants **Hitachi, Ltd.** and **Hitachi America, Ltd.** are referred to collectively
7 herein at "**Hitachi.**"
8

9 30. Defendant **Hynix Semiconductor, Inc.** is a business entity organized under the
10 laws of South Korea, with its principal place of business at San 136-1, Ami-ri, Bubal-eub,
11 Icheon-si, Gyeonggi-do, Korea. During the Class Period Defendant Hynix Semiconductor, Inc.
12 sold SRAM to customers throughout the United States.
13

14 31. Defendant **Hynix Semiconductor America, Inc.** is a wholly owned and
15 controlled subsidiary of Defendant Hynix Semiconductor, Inc. with its principal place of
16 business at 3101 North First Street, San Jose, California 95134. During the Class Period
17 Defendant Hynix Semiconductor America, Inc. sold SRAM to customers throughout the United
18 States.
19

20 32. Defendants **Hynix Semiconductor, Inc.** and **Hynix Semiconductor America,**
21 **Inc.** are referred to collectively herein as "**Hynix.**"
22

23 33. Defendant **Integrated Silicon Solution, Inc.** ("ISSI") is a Delaware corporation
24 with its principal place of business at 2231 Lawson Lane, Santa Clara, California 95054.
25 During the Class Period, ISSI sold SRAM to customers throughout the United States.
26
27
28

1 34. Defendant **Micron Technology, Inc.** is a Delaware corporation, with its
2 principal place of business at 8000 South Federal Way, Boise, Idaho 83716. During the Class
3 Period, Micron sold SRAM to customers throughout the United States.

4
5 35. Defendant **Micron Semiconductor Products, Inc.** is an Idaho corporation
6 located at 8000 South Federal Way, Boise, Idaho and is a wholly owned and controlled
7 subsidiary of defendant Micron Technology, Inc. (collectively referred to as "Micron"). During
8 the Class Period Micron and its wholly owned subsidiary Micron Semiconductor Products, Inc.
9 sold SRAM to customers throughout the United States, including sales through Micron's
10 Crucial Technology Division.

11
12 36. Defendant **Mitsubishi Electric Corporation** is a business entity organized
13 under the laws of Japan, with its principal place of business at Tokyo Building, 2-7-3,
14 Marunouchi, Chiyoda-ku, Tokyo 100-8310, Japan. In 2003, Mitsubishi Electric Corporation
15 transferred its SRAM business to Defendant Renesas Technology Corporation, an entity
16 established as a joint venture between Mitsubishi Electric Corporation and Defendant Hitachi,
17 Ltd. During the Class Period Defendant Mitsubishi Electric Corporation sold SRAM to
18 customers throughout the United States.

19
20
21 37. Defendant **Mitsubishi Electric & Electronics USA, Inc.** is a wholly owned and
22 controlled subsidiary of Defendant Mitsubishi Electric Corporation, with its principal place of
23 business at 5665 Plaza Drive, Cypress, California 90630. During the Class Period Defendant
24 Mitsubishi Electric & Electronics USA, Inc. sold SRAM to customers throughout the United
25 States.

26
27 38. Defendants **Mitsubishi Electric Corporation** and **Mitsubishi Electric &**
28 **Electronics USA, Inc.** are referred to collectively herein as "**Mitsubishi.**"

1 39. Defendant **Mosel Vitelic, Inc.** ("MVI") is a business entity organized under the
2 laws of Taiwan, with its principal place of business at No. 1 Creation Road, Hsinchu Science
3 Park, Hsinchu, Taiwan, 30077. During the Class Period Defendant MVI sold SRAM to
4 customers throughout the United States.
5

6 40. Defendant **Mosel Vitelic Corporation** ("MVC") is a wholly owned and
7 controlled subsidiary of Defendant MVI with its principal place of business at 3910 North First
8 Street, San Jose, California 95134. During the Class Period Defendant MVC sold SRAM to
9 customers throughout the United States.
10

11 41. Defendants **MVI** and **MVC** are referred to collectively herein as "**Mosel**
12 **Vitellic.**"
13

14 42. Defendant **NEC Electronics Corporation** is a business entity organized under
15 the laws of Japan, with its principal place of business at 1753 Shimonumabe, Nakahara-Ku,
16 Kawasaki, Kanagawa, Japan 211-8668. During the Class Period Defendant NEC Electronics
17 Corporation sold SRAM to customers throughout the United States.
18

19 43. Defendant **NEC Electronics America, Inc.** is a wholly owned and controlled
20 subsidiary of Defendant NEC Electronics Corporation, with its principal place of business at
21 2880 Scott Boulevard, Santa Clara, California 95050. During the Class Period Defendant NEC
22 Electronics America, Inc. sold SRAM to customers throughout the United States.
23

24 44. Defendants **NEC Electronics Corporation** and **NEC Electronics America,**
25 **Inc.,** are collectively referred to herein as "**NEC.**"
26

27 45. Defendant **Renesas Technology Corporation** is a business entity organized
28 under the laws of Japan with its principal place of business at Nippon Bldg., 2-6-2, Ote-machi,

1 Chiyoda-ku, Tokyo 100-0004, Japan. Renesas Technology Corporation was established in
2 April 2003 as a joint venture between Defendants Hitachi, Ltd. and Mitsubishi Electric Corp.
3 During the Class Period Defendant Renesas Technology Corporation sold SRAM to customers
4 throughout the United States.
5

6 46. Defendant **Renesas Technology America, Inc.** is a wholly owned and
7 controlled subsidiary of Renesas Technology Corporation with its principal place of business at
8 45 Holger Way, San Jose, California 95134. During the Class Period Defendant Renesas
9 Technology America, Inc. sold SRAM to customers throughout the United States.
10

11 47. Defendants **Renesas Technology Corporation** and **Renesas Technology**
12 **America, Inc.** are referred to collectively herein as "**Renesas.**"
13

14 48. Defendant **Samsung Electronics Co. Ltd.** is a business entity organized under
15 the laws of South Korea with its principal headquarters at 250, Taepyong-ro 2-ga, Jung-gu,
16 Seoul 100-742, Korea. During the Class Period Defendant Samsung Electronics Company Ltd.
17 sold SRAM to customers throughout the United States.
18

19 49. Defendant **Samsung Electronics America** is a wholly owned and controlled
20 subsidiary of Defendant Samsung Electronics Company Ltd. with its principal place of business
21 at 105 Challenger Rd., Ridgefield Park, New Jersey 07660. During the Class Period Defendant
22 Samsung Electronics America sold SRAM to customers throughout the United States.
23

24 50. Defendant **Samsung Semiconductor, Inc.** is a wholly owned and controlled
25 subsidiary of Defendant Samsung Electronics Company Ltd. with its principal place of business
26 at 3655 N. 1st St., San Jose, California 95134. During the Class Period Defendant Samsung
27 Semiconductor, Inc. sold SRAM to customers throughout the United States.
28

51. Defendants **Samsung Electronics Company Ltd., Samsung Electronics America and Samsung Semiconductor, Inc.** are referred to collectively herein as "**Samsung.**"

52. Defendant **Toshiba Corporation** is a business entity organized under the laws of Japan, with its principal place of business at 1-1 Shibaura, 1-chome Minato-ku, Tokyo 105-8001, Japan. During the Class Period Defendant Toshiba Corporation sold SRAM to customers throughout the United States.

53. Defendant **Toshiba America, Inc.** is a wholly owned and controlled subsidiary of Toshiba Corporation with its principal place of business at 1251 Avenue of the Americas, Suite 4110, New York, New York 10020. During the Class Period Defendant Toshiba America, Inc. sold SRAM to customers throughout the United States.

54. Defendant **Toshiba America Electronic Components, Inc.** is a wholly owned and controlled subsidiary of Toshiba Corporation with its principal place of business at 19900 MacArthur Boulevard, Suite 400, Irvine, California 92612. During the Class Period Defendant Toshiba America Electronics Components, Inc. sold SRAM to customers throughout the United States.

55. Defendants **Toshiba Corporation, Toshiba America, Inc. and Toshiba America Electronic Components, Inc.** are referred to collectively herein as **"Toshiba."**

VI. CO-CONSPIRATORS

56. Various other persons, firms and corporations, not named as Defendants herein, and presently unknown to Plaintiffs, have participated as co-conspirators with Defendants and have performed acts and made statements in furtherance of the conspiracy and/or in furtherance of the anticompetitive, unfair, or deceptive conduct

57. Whenever in this Complaint reference is made to any act, deed, or transaction of any corporation, the allegations mean that the corporation engaged in the act, deed, or transaction by or through its officers, directors, agents, employees, or representatives while they were actively engaged in the management, direction, control, or transaction of the corporation's business or affairs.

VII. CLASS ACTION ALLEGATIONS

58. Plaintiffs bring this action on behalf of themselves and all others similarly situated (the "Class") pursuant to Federal Rules of Civil Procedure 23(a) and 23(b)(3). The Class is defined as follows:

All persons and entities who, during the period November 1, 1996 through December 31, 2005, purchased SRAM in the United States directly from Defendants or any subsidiaries or affiliates thereof. Excluded from the Class are Defendants, their parent companies, subsidiaries and affiliates, any co-conspirators, and all governmental entities.

59. Plaintiffs do not know the exact size of the Class, and believe such information to be in the exclusive control of the Defendants. Due to the nature of the trade and commerce involved, however, Plaintiffs believe that the Class includes thousands of SRAM purchasers and is so numerous and geographically dispersed throughout the United States as to render joinder of all Class members impracticable.

60. There are questions of law or fact common to the Class, including but not limited to the following:

a. Whether Defendants engaged in a contract, combination, and/or conspiracy to fix, raise, maintain, or stabilize prices of SRAM sold in the United States;

1 b. Whether Defendants' conduct caused the prices of SRAM sold in the
2 United States to be at artificially high and noncompetitive levels;

3 c. Whether Plaintiffs and the other members of the Class were injured by
4 Defendants' conduct, and, if so, the appropriate class-wide measure of damages for Class
5 members; and,
6

7 d. Whether Plaintiffs and the Class are entitled to injunctive relief.

8 61. These and other questions of law and fact are common to the Class and
9 predominate over any questions affecting only individual Class members.
10

11 62. Plaintiffs' claims are typical of the claims of the Class because Plaintiffs directly
12 purchased SRAM from one or more of the Defendants.

13 63. Plaintiffs will fairly and adequately represent the interests of the Class in that
14 Plaintiffs are direct purchasers of SRAM and have no conflict with any other members of the
15 Class. Furthermore, Plaintiffs have retained competent counsel experienced in antitrust and
16 class action litigation.
17

18 64. The prosecution of separate actions by individual Class members would create
19 the risk of inconsistent or varying adjudications.
20

21 65. Defendants have acted, and refused to act, on grounds generally applicable to the
22 Class, thereby making appropriate final injunctive relief with respect to the Class as a whole.
23

24 66. This class action is superior to the alternatives, if any, for fair and efficient
25 adjudication of this controversy. Prosecution as a class action will eliminate the possibility of
26 repetitious litigation.

27 ///
28

VIII. TRADE AND COMMERCE

67. During the Class Period, each Defendant sold SRAM in the United States, in a continuous and uninterrupted flow of interstate commerce and foreign commerce.

68. During the Class Period Defendants collectively controlled a significant share of the market for SRAM, both globally and in the United States.

69. The business activities of the Defendants substantially affected interstate trade and commerce.

IX. FACTUAL ALLEGATIONS

A. The SRAM Industry

70. SRAMs are memory devices capable of retaining information using very low power and without the need to periodically “refresh” contents, as do DRAMs. SRAMs have long been a standard, commodity-type product, filling memory needs of applications ranging from computer electronics to supercomputers. SRAM is designed to fill two needs: (1) to provide a direct interface with the CPU (central processing unit) at speeds not attainable by DRAMs; and, (2) to replace DRAMs in systems that require very low battery consumption. In the first role, SRAM serves as cache memory, interfacing between DRAMs and the CPU. The second driving force for SRAM technology is low power applications. In such cases, SRAMs are used in most portable equipment, increasing battery life as the DRAM refresh current is several orders of magnitude more than the low-power SRAM standby current.

B. The SRAM Market Was Conducive to a Price-Fixing Conspiracy

71. The market for the manufacture and sale of SRAM has a number of features that facilitated the implementation of the price-fixing conspiracy alleged in this Complaint.

1 Specifically, SRAM is a homogenous product sold by Defendants and purchased by Plaintiffs
2 and members of the class primarily on the basis of price. The SRAM market is highly
3 concentrated with Defendants accounting for a large portion of all SRAM sales in the United
4 States. Moreover, the market for the manufacture and sale of SRAM is subject to high
5 manufacturing and technological barriers to entry. Efficient manufacturing plants are large and
6 costly, and SRAM is also subject to technological advances, requiring firms within the industry,
7 and any potential entrants, to undertake significant research and development expenses.
8

9
10 **C. High Barriers to Entry**

11 72. SRAM production requires the building of sophisticated – and costly – facilities
12 as well as the hiring of skilled technicians and engineers, not to mention sales personnel and
13 marketing executives. It is widely recognized, especially within the SRAM industry, that the
14 barriers to entry are high: “The fixed costs in semiconductor . . . are extremely high, forming a
15 natural entry barrier to competition.” Jong-Young Yun, CEO of Samsung (as quoted from
16 Samsung’s 2003 Annual Report).
17

18 **D. SRAM Is a Commodity Product**

19
20 73. SRAM is generally viewed as a commodity product. Defendants have worked
21 together to further this reality. For example, Cypress, IDT, Micron, NEC, Samsung and Hitachi
22 have formed a group to develop a commodity SRAM (Quad Data Rate “QDR” SRAM) in the
23 hope that it will become an industry standard. Toshiba, ISSI, and Mitsubishi have also formed
24 a group, and created a standardized family of high-speed synchronous SRAMs (SigmaRAM)
25 developed for networking and telecommunications applications.
26
27
28

1 74. Defendants recognize the commodity nature of their products. For example, in
2 its 1999 Annual Report, Cypress repeatedly refers to asynchronous SRAM as “commodity
3 asynchronous SRAM.”
4

5 **E. 1996 – The First Evidence of The Conspiracy**

6 75. By late-1996, Samsung was actively monitoring competitor prices and working
7 with competitors to maintain artificially high prices.
8

9 76. In November 1996, Samsung was also talking to NEC and Mitsubishi about
10 SRAM prices. In an internal e-mail, Richard Walsh, Samsung SRAM Marketing, reported his
11 conversations: “We tried to confirm the NEC price of \$2.70 but they claimed not to have
12 broken \$3. . . . I spoke with Mitsubishi at Electronica (WK 9646) and they didn’t deny a price
13 range of \$17. We are following (matching) but not leading the market in this area.”
14

15 77. Also in 1997, Defendant Micron commenced an antidumping proceeding before
16 the International Trade Commission (“ITC”) with respect to SRAM imports from Korea and
17 Taiwan. While the ITC proceeding was not resolved in Micron’s favor – the ITC ultimately
18 concluded that the sales in the United States at less than fair value did not cause material injury
19 to domestic industry – the proceedings were a factor that favored collusion. Antidumping
20 complaints encourage both importers and domestic producers to raise prices – the former to
21 avoid further antidumping claims and the latter to establish a high base price against which to
22 evaluate their future antidumping claims against importers. Indeed, the DOJ prosecuted a
23 separate price-fixing conspiracy involving DRAM that evolved following DRAM-related
24 antidumping claims brought by Micron.
25
26
27
28

1 **F. Acts in Furtherance of the Alleged Conspiracy**

2 78. Defendants agreed and conspired collectively to fix, raise, and/or maintain the
3 price of SRAM by: (i) communicating with competitors about pricing to customers; (ii)
4 communicating with competitors about general market conditions, including prices, capacity
5 and production; (iii) exchanging product roadmaps; and, (iv) agreeing to reduce supply.
6

7 79. Defendants entered into agreements to maintain prices at artificially high levels.
8 These agreements had the effect both of artificially maintaining SRAM prices and artificially
9 increasing SRAM prices.
10

11 80. Throughout the Class Period, Defendants, in furtherance of their conspiracy,
12 regularly communicated with each other to discuss and fix prices. By doing so, Defendants
13 built and strengthened communication channels with each other. By way of example only, the
14 following are indicative of discussions among and between competitors:
15

- 16 • In March 1998, an NEC representative had discussions about pricing with
17 representatives from Micron, Etron, Cypress, Fujitsu, Hitachi, Mitsubishi,
18 and Toshiba.
19
- 20 • In October 1998, in response to questions from Hitachi (Dennis Lee),
21 Samsung (J.B. Ra) disclosed certain of its production information.
22
- 23 • In December 1998, Dennis Lee (Hitachi) wrote J.B. Ra (Samsung),
24 requesting "October and November revenue and ASP [average selling price]
25 by device type. . . ." In return, Lee included Hitachi's information. In
26 February 1999, Lee again wrote J.B. Ra. In the e-mail, which was titled,
27 "Time for the monthly update. . . ." Lee wrote: "Got some information for
28

1 you and would like the same from you.” Lee included pricing and
2 volume/inventory information for slow SRAM, fast SRAM and PSRAM.

3 81. During 1999 Defendants continued their pricing discussions and developed two
4 groups to develop commodity SRAM.

5
6 **G. The QDR Project**

7 82. A significant opportunity to further the conspiracy arose in February 1999, when
8 Cypress, IDT and Micron formed a group “to mutually define, develop and deliver the next-
9 generation SRAM for the high-speed networking market.” In fact, this group was a cover for
10 fixing prices. NEC joined the group on January 29, 2001, Samsung joined on May 14, 2001,
11 and Hitachi joined on September 24, 2001.

12
13 83. This QDR group provided numerous opportunities for the member-Defendants
14 to meet and fix prices. Between April 9, 2001 and August 2, 2005, there were at least 21
15 meetings.

16
17 **H. The SigmaRAM Project**

18 84. Another SRAM group called the SigmaRAM group was formed in July 1999.
19 The members of the group included Integrated Silicon Solution Inc., Mitsubishi Electric
20 Corporation, and Toshiba Corporation. This group was also used to exchange and fix prices.

21
22 **I. The Conspiracy Continues**

23 85. In October 1999, John Bugee (Samsung), in an internal e-mail, discussed pricing
24 for Cisco, based on information he received from Micron: “YH stopped by this afternoon to
25 discuss the following: 1) he asked if we have finalized the price with Cisco. My response was
26 no, we were going to discuss internally to see if we can make a move on price (flat or only up
27 28

1 slightly). The key reason is that our competition is not making any mid-month adjustment
2 (Micron confirmed this afternoon)."

3
4 86. These are just a few examples of the evidence Plaintiffs already possess; there
5 are many more. In addition, Defendants repeatedly met with each other throughout this period
6 to discuss prices, production, customers, and road maps.

7 **J. High-Level Executives of Defendants Were Key Players in Furthering the**
8 **Conspiracy**

9 87. A number of the alleged conspiratorial meetings took place between one or more
10 of Defendants' high-level executives. For example, there were numerous meetings about
11 SRAM business between Young Bae Rha from Samsung and a representative from a
12 Defendant-competitor. Rha was Samsung's Vice President of Sales and Marketing for the
13 Memory Division, and he was indicted in 2006 by the DOJ as part of the government's on-
14 going DRAM investigation. Currently, Rha remains at large.
15

16 88. In a Micron internal e-mail correspondence, Kathy Radford, Micron Regional
17 Sales Manager, gave voice to what was widely understood: "Steve [Appleton, Micron, CEO,
18 President and Chairman] talks regularly to the CEOs of all of the comp." In the same e-mail
19 discussion, Ms. Radford detailed conversations with competitors about DRAM prices and how
20 prices can be coordinated: "Micron is serious as well. We are not budging from \$20. Also,
21 checked with all of the OEMs and all of the major suppliers are also holding at \$20." The same
22 coordination existed in the SRAM industry.
23

24 89. Other high-level executives at the other defendants also participated, directed,
25 and condoned the price-fixing conspiracy.
26
27
28

1 **K. Conspiratorial Activities in 2000**

2 90. In 2000, SRAM manufacturers were able to increase significantly SRAM
3 average selling prices, resulting in 39.7% industry revenue growth from the prior year. Never
4 complacent, SRAM manufacturers continued to meet with each other – privately and through
5 group meetings – to discuss the industry and further the conspiracy.
6

7 91. Throughout the year, Defendants continued their pricing discussions, furthering
8 their conspiracy.
9

10 92. In June 2000, Hae Dong Park, a Samsung SRAM Marketing Manager, asked
11 John Bugee (Samsung) for competitor pricing. Bugee provided information from such
12 supposed competitors as Etron and Cypress, and other Samsung employees obtained and
13 distributed information from Micron, Mitsubishi, and Hitachi. Over the course of the year,
14 Bugee provided regular updates of competitor pricing. These updates were distributed amongst
15 Defendants at least every month beginning no later than August 2000 and continuing through
16 April of 2001.
17

18 93. In November 2000, representatives from Hynix, IDT, Micron, Mitsubishi and
19 Cypress, among others, met in Bordeaux, France: “The goals for this meeting are for the
20 site/regions to present an overview of your respective business; exchange individual points of
21 view on market conditions; define foundation together to build a global memory commodity
22 strategy. . . . On the November 15th, STM, IDT, Micron and Mitsubishi will present their
23 product road maps in detail.” Cypress was also scheduled to present its roadmap, and Ken
24 Heller, Director of Sales – Eastern Area for Hynix, was also scheduled to present Hynix’s
25 roadmap.
26
27
28

1 **L. Defendants Exchanged Confidential "Roadmaps" to Further the Conspiracy**

2 94. Roadmaps are confidential product introduction timelines that each Defendant
3 regularly prepared. The roadmaps detailed proprietary information regarding the technical
4 specifications of a Defendant's products as well as the timing – and plans – for production.
5 Roadmaps are key documents that spell out a Defendant's supply plans, which is a major factor
6 influencing overall pricing. Notwithstanding the proprietary nature of the roadmaps, it was
7 common practice in the SRAM industry – as was the case in the DRAM industry – for
8 Defendants to "exchange" roadmaps.
9

10
11 95. During the Class Period, Micron, NEC, Mosel, Cypress, Renesas, Hitachi,
12 Toshiba, and Samsung shared roadmaps. Defendants exchanged these roadmaps for the
13 purpose of communicating information about their production, supply plans, and pricing.
14

15 96. In February 2003, Mark D'Arcangelo (Hitachi) sent an e-mail to Jack Truong
16 (Samsung), asking, "Are you willing to exchange roadmaps again?" Truong sent D'Arcangelo
17 Samsung's fast SRAM roadmaps. D'Arcangelo responded by sending Hitachi's roadmap:
18 "Here's ours. I'm embarrassed to send you our (1) pager versus your (10) pages, oh well.
19 Regarding lunch, maybe next week is better. How about next Wednesday 2/12."
20

21 **M. Conspiratorial Activities in 2001**

22 97. In 2001 Defendants continued their price-fixing conspiracy.
23

24 98. In a June 16, 2001 email Yoon (Hynix) encouraged all Defendants to maintain
25 prices at high levels by reducing production and through the continued exchange of
26 information. Yoon said "As you may know, market situation is decided by two side, demand
27
28

1 and supply. That means, suppliers can control the market situation if they have accurate
2 information on customer and market demand in general.”

3
4 **As you may know, market situation is decided by two side, demand and supply.**

5 **That means, suppliers can control the market situation if they have accurate information on customer and market demand in general.**

6
7 99. During 2001, Defendants had numerous meetings at which they discussed
8 SRAM business, prices, customers, and supply. At a minimum, these meetings took place in
9 August, September, October, and November.

10 100. Examples of policing among Defendants are ample. Just one is an April 2001
11 email from David Bagby of Samsung describing complaints about pricing made to him by a
12 supposed competitor: “Our competition called me yesterday upset at a \$5.75 4M Fast price we
13 gave in Singapore.”
14

15 **~~Original Message~~**

16 **From: David Bagby-SSI**

17 **Sent: Friday, April 27, 2001 2:07 PM**

18 **To: 'Peter Austin'**

19 **Subject: RE: Big Deal**

20 **Peter I forgot to mention please don't tell anyone this. Our competition**
21 **called me yesterday upset at a \$5 75 4M fast price we gave in Singapore.**

22
23 **N. The SRAM Defendants' Price-Fixing Culture**

24 101. Mosel Vitelic was also actively meeting with competitors and discussing prices.
25 In a series of emails between Michael Ramirez, Kevin Chen, and George Lin (Director of
26 Management and Sales and former Samsung Sales Manager), Kevin Chen stated that he
27 “checked” SRAM prices with “vendors such as Samsung, Hynix, and ISSI. Michael Ramirez
28

1 said that "ISSI told me last month that for some customers, they were prepared to be in the 3.50
2 range so we should remain flexible with the market."

3 102. Bugee (Samsung) also obtained competitive pricing information from Etron and
4 others. The impetus for the contact was a need to understand competitors' pricing to Intel,
5 because as Woung M. Lee (Samsung) put it: "There is old saying in Korea that 'you will never
6 lose if you know yourself and the other party.'" In the same June 20, 2000 e-mail Lee
7 explained how with the right information Samsung could control supply (and therefore price):
8

9 Hello everyone,

10 Please be refer to the attached file showing the 4Mb oversupply for
11 Intel in Q4/00 as much as 1.3Mpcs per month.

12 In order to avoid this oversupply situation, SEC will reduce 4Mb
13 production and divert to 8Mb density in Q4.

14 As well as SEC is ready to enjoy the pricing game with Intel. All
15 set!!!

16 **O. Conspiratorial Activities 2002-2005**

17 103. In 2002, as Defendants continued to meet and communicate, SRAM prices
18 increased.
19

20 104. Throughout at least 2002, Hitachi was directly sending its monthly SRAM sales
21 information to Samsung. For example, in January 2002, Mark D'Arcangelo, a Hitachi
22 representative, who later worked at Renesas, sent Jack Truong (Samsung) an e-mail under the
23 title, "RE: Hitachi Dec/01," that contained, in part, "SRAM \$4.4." (Truong formerly worked at
24 Hitachi.
25

26 ///

27 ///

보낸 사람: Jack Truong-SSI
 보낸 날짜: 2002년 1월 14일 월요일 오후 1:05
 받는 사람: David Bagby-SSI; Steve Weinger-SSI
 제목: FW: Hitachi Dec/01
 첨부 파일: Card for Mark D'Arcangelo



Mark.DArcangelo
 o.vcf (329 B)

Guys,

Here are numbers for Dec.'s month Hitachi.

Jack

-----Original Message-----

From: Mark D'Arcangelo [mailto:mark.darcangelo@hisa.hitachi.com]
 Sent: Monday, January 14, 2002 11:43 AM
 To: truong jack

Subject: Re: Hitachi Dec/01

Jack,

SRAM 54.4
 Flash 52.3
 MCP 80.8

Total Sgr Mem: - \$7.1M

Mark

In September 2001, he wrote an e-mail to Masato Ikeda (a Hitachi representative), notifying him and others about his job change: "Hello folks, I have landed and working for Samsung starting this week. My position is very much the same as I worked at HSA [Hitachi]." Truong internally forwarded the e-mail and wrote: "Guys, Hear [sic] are numbers for Dec.'s month Hitachi." The following month, D'Arcangelo sent another e-mail to Truong, stating, in part, "Our Feb numbers were horrible: LP: \$1,458,000[;] Fast Async: \$100,000[;] Sync: \$161,000." Truong forwarded the information to his colleagues. In June 2002, D'Arcangelo sent Truong an e-mail in which he reported Hitachi's May numbers and which he prefaced by writing, "Sorry, I forgot to send this last week. Our SRAM numbers were horrible last month." In July

1 2002, D'Arcangelo again reported Hitachi's numbers, writing, in part, "Glad to hear you
2 enjoyed your holiday weekend! #'s for June."

3
4 105. In May 2002, David Bagby (Samsung) asked Mitsuru Shimizu from Hitachi for
5 "Hitachi WW SRAM number from Q4 revenues and Q1 revenues." In return, he gave Hitachi
6 Samsung's numbers: "Samsung actual was Q4=\$170M[;] Q1=\$150M." Shimizu responded
7 with Hitachi's numbers.

8
9 106. In September 2002, Toshihiko Seki, Hitachi, provided some information to
10 Samsung and asked Truong to share some Samsung information:

11 Jack,

12 Good to meet you last week?

13 Are you able to share with me some of the low power SRAM
14 revenue number?

15 I am wondering what is your revenue portion of SRAM wafer
16 business out of the overall Low Power SRAM family: In case of
17 Hitachi, we do roughly 7M\$/mo in worldwide right now and wafer
business is about 2M\$, which is about 30% of overall. . . .

18 Can you share some data?

19
20 In response to the inquiry, Truong disclosed Samsung's SRAM revenue numbers. In return, he
21 requested similar information from Hitachi, which Seki provided.

22 107. Throughout 2002 Defendants continued to share information about pricing,
23 production, supply, customers, and roadmaps. They did this to further the price-fixing
24 agreement that they had entered into.

25
26 108. The industry saw some consolidation in 2003, increasing market concentration
27 and further making the SRAM market conducive to a price-fixing conspiracy.
28

1 109. Hitachi continued to share information with Samsung. In January 2003, Truong
2 wrote D'Arcangelo and asked if he could provide Truong with "the Q4/02 SRAM revenue in
3 the US?" D'Arcangelo responded and provided Q4 SRAM revenue for synchronous SRAM,
4 fast SRAM and slow SRAM. He also asked for Samsung's numbers, a request which Truong
5 completed based on Truong internally forwarding D'Arcangelo's request and receiving the
6 responsive information.
7

8 110. In February, March, April, June, and November of 2003 meetings were held
9 amongst Defendants to share information about pricing, production, supply, customers, and
10 roadmaps. They did this to further the price-fixing agreement that they had entered into.
11

12 111. In April 2003, Hitachi and Mitsubishi merged their SRAM business and formed
13 Renesas.
14

15 112. In February, April, and June of 2004 meetings were held amongst Defendants to
16 share information about pricing, production, supply, customers, and roadmaps. They did this to
17 further the price-fixing agreement that they had entered into.
18

19 113. In January 2005, Y.S. (John) Lee, from Samsung's Memory Technical
20 Marketing group, sent an e-mail to Harmeet Bhugra at I.D.T., inquiring about sharing
21 information: "I'd like to propose to have a short meeting to discuss about the SRAM business.
22 We can touch high speed SRAM and low power SRAM as well. The purpose is to share each
23 other's business and development status of SRAM and some strategy for this year."
24

25 114. Meetings amongst Defendants to share information about pricing, production,
26 supply, customers, and roadmaps continued in 2005, taking place at least in June, August, and
27
28

1 September of 2005. These meetings were held in order to further the price-fixing agreement
2 that they had entered into.

3
4 **P. Department of Justice issues subpoenas to SRAM manufacturers while**
5 **European Union antitrust officials raid the offices of certain SRAM**
6 **manufacturers**

7 115. In October 2006, the DOJ sent out subpoenas to a number of companies in
8 connection with an investigation of cartel activity in the SRAM industry during the period from
9 January 1, 1998 through December 31, 2005. A DOJ spokesperson was quoted as saying:
10 “[t]he U.S. Department of Justice’s antitrust division is conducting an investigation regarding
11 anti-competitive practices against chief SRAM manufacturers.” The following Defendants
12 received subpoenas: Etron, Cypress, Hynix, Renesas, Hitachi, NEC, Toshiba, Mitsubishi,
13 Micron, and Samsung.

14
15 116. In October 2006, European Union antitrust officials raided the offices of several
16 SRAM chip manufacturers in Germany as part of an independent cartel investigation.

17 **Q. The DRAM Conspiracy**

18
19 117. A majority of the Defendants also sold DRAM during the Class Period, and
20 were the subjects – and targets – of the Department of Justice’s antitrust investigation into the
21 DRAM cartel.

22 118. In addition to Rha, other Samsung marketing employees were imprisoned and
23 fined for their roles in the DRAM cartel. As noted above, Il Ung Kim, Vice President of
24 Marketing for Samsung’s Memory Division, was fined \$250,000 and sentenced to prison for 14
25 months. Thomas Quinn, another Vice President of Marketing for Samsung’s Memory Division,
26 was fined \$250,000 and sentenced to 8 months in prison.
27
28

119. A number of Hynix marketing executives were also targeted by the DOJ for their role in the DRAM conspiracy.

- Dae Soo Kim, Hynix's General Manager of Worldwide Sales & Marketing was fined \$250,000 and sentenced to 8 months in prison.
- Kun Chul Suh, Hynix's Senior Manager, Memory Products Marketing was fined \$250,000 and sentenced to a 6-month prison term.
- Choon Yub Choi, Hynix's General Manager, Marketing and Sales (of its German subsidiary) was fined \$250,000 and sentenced to prison for 5 months.
- Gary Swanson, Hynix's Senior Vice President of Memory Sales and Marketing was indicted in October 2006. He is currently scheduled to go to trial in September 2007.

120. As detailed *supra*, not only are the same companies that are involved in the SRAM industry involved in the DRAM industry but also a number of the individuals (executives, sales representatives, and marketing representatives) had dual responsibility for DRAM and SRAM. On December 1, 2006, after news of the DOJ's investigation of the SRAM industry surfaced *Network World* focused on the closeness of the DRAM and SRAM markets:

While the DOJ hasn't said specifically what it is investigating [referring to graphics cards], one industry analyst speculated that the case could be about price fixing. The DOJ has already charged a number of chip companies in the DRAM memory chip market for price fixing, and is investigating several in the SRAM chip market. "If the DOJ wanted to, it could just go down every line in the semiconductor industry and find the same issue," said Gartner Inc. analyst Richard Gordon. "That's because there are a relatively

1 few number of suppliers in the chip industry and an open flow of
2 communication between competitors and customers, who may not
3 define price fixing the same way the DOJ does," he said.

4 121. Mike Sadler is a paradigmatic example of the dual DRAM and SRAM roles
5 played by key actors in the DRAM investigation. Sadler, Micron's Vice President of
6 Worldwide Sales, was in the charge of the group that was responsible for DRAM *and* SRAM.

7 122. On June 18, 2002, Micron announced that it had been cooperating with the
8 DOJ's DRAM investigation, pursuant to the DOJ's amnesty program. As the amnesty
9 applicant, Micron was immune from criminal fines for its participation in the DRAM
10 conspiracy. In December 2003, however, the DOJ charged a former Micron sales manager with
11 obstruction of justice for having withheld and altered documents responsive to a grand jury
12 subpoena. The former Micron executive was sentenced to serve six months of home detention.
13 subpoena. The former Micron executive was sentenced to serve six months of home detention.

14 123. On November 11, 2004, Micron's CEO, Steve Appleton, admitted that "the
15 DOJ's investigation has revealed evidence of price fixing by Micron employees and its
16 competitors on DRAM sold to certain computer and server manufacturers."
17 competitors on DRAM sold to certain computer and server manufacturers."

18 124. According to the antitrust complaint filed by the attorney generals from 34 states
19 against Hynix, Micron, Mosel Vitelic, NEC and other DRAM manufacturers, *The State of*
20 *California v. Infineon Tech. AG*, No. C 06 4333 (N.D. Cal. Jul. 14, 2006) ("AG Complaint"), at
21 least 19 Micron employees exchanged price related data in communication with employees of
22 Samsung, Hynix, Mosel Vitelic, Nanya, Elpida, NEC, and Toshiba.
23 Samsung, Hynix, Mosel Vitelic, Nanya, Elpida, NEC, and Toshiba.

24 125. Hynix played an early – and continuous – role in the DRAM conspiracy. Similar
25 to its efforts to meet with SRAM manufacturers to coordinate supply – and control price –
26 Hynix spearheaded the same type of coordinated plan in the DRAM industry. As alleged by the
27 State of California, "As early as spring of 1998 a Vice President of Hyundai Electronics
28 State of California, "As early as spring of 1998 a Vice President of Hyundai Electronics

1 America, the predecessor of Defendant Hynix, writing to the industry in general, proposed, as a
2 solution to the problem of excess supply, that DRAM makers shut down production for a
3 limited time to stabilize prices. The article stated that "if the plan is to work . . . all DRAM
4 makers must play fairly for the overall good of our industry. A rogue player . . . can keep the
5 DRAM business on thin ice."
6

7 126. On May 11, 2005, Hynix Semiconductor, Inc., pled guilty to participating in a
8 conspiracy to suppress and eliminate competition by fixing the prices of DRAM. Hynix
9 admitted during the sentencing hearing that, in furtherance of the conspiracy, its officers and
10 employees engaged in discussions and attended meetings with representatives of other DRAM
11 manufacturers. During these discussions and meetings, agreements were reached to fix DRAM
12 prices. Hynix was fined \$185 million. In addition, four Hynix executives were charged with
13 engaging in criminal cartel activities. Each was fined \$250,000, and the executives received
14 prison sentences ranging from five to eight months.
15
16

17 127. It is believed that during the DRAM conspiracy at least 19 Hynix officers and
18 employees, including senior executives with final pricing authority, had price related contacts
19 with employees of Samsung, Micron, Toshiba, and NEC.
20

21 128. On November 30, 2005, Samsung Electronics Company and Samsung
22 Semiconductor, Inc., pled guilty to participating in a conspiracy to suppress and eliminate
23 competition by fixing the prices of DRAM. Samsung admitted during the sentencing hearing
24 that, in furtherance of the conspiracy, its officers and employees engaged in discussions and
25 attended meetings with representatives of other DRAM manufacturers. During these
26 discussions and meetings, agreements were reached to fix DRAM prices. Samsung was fined
27 \$300 million. It is believed that during the DRAM conspiracy at least 48 Samsung officers and
28

1 employees, including senior executives with final pricing authority, had price related contacts
2 with employees of Micron, Hynix, Toshiba, NEC, Hitachi, and Mitsubishi.

3
4 129. A total of six Samsung executives have thus far pled guilty based on their
5 respective roles in the global cartel. Each has been fined \$250,000, and the executives received
6 prison sentences ranging from seven to fourteen months. Among the Samsung individuals
7 charged were the vice presidents for marketing and sales for Samsung's memory division and
8 the vice president for marketing of memory products at Samsung Semiconductor (Samsung's
9 U.S. subsidiary):
10

- 11 • Il Ung Kim – (Samsung Electronics – vice president of marketing for
12 memory division) \$250,000 fine and 14 month prison sentence.
- 13 • Sun Woo Lee – (Samsung Electronics – senior manager DRAM sales)
14 \$250,000 fine and 8 month prison sentence.
- 15 • Yeongho Kang – (Samsung Semiconductor – associate director of DRAM
16 marketing) \$250,000 fine and 7 month prison sentence.
- 17 • Young Woo Lee – (Samsung subsidiary in Germany – sales director)
18 \$250,000 fine and 7 month prison sentence.
- 19 • Thomas Quinn – (Samsung Semiconductor – vice president of marketing for
20 memory products) \$250,000 fine and 8 month prison sentence.
- 21 • Young Hwan Park – (formerly VP of sales at Samsung Electronics; currently
22 president of Samsung Semiconductor) \$250,000 fine and 10 month prison
23 sentence.
24
25
26
27
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- Young Bae Rha – (Samsung Electronics – vice president of sales and marketing for memory division); Charged in October 2006 indictment and remains at large.

X. SUMMARY OF ALLEGATIONS AGAINST DEFENDANTS

Cypress

130. Cypress entered into the price-fixing conspiracy alleged in this complaint and took steps in furtherance of the conspiracy. Cypress had meetings, discussions, and communications during the Class Period with NEC, Samsung, IDT, Hynix, Micron, Mitsubishi concerning prices, supply, production capacity, and roadmaps. These acts were done as part of and in furtherance of the price-fixing conspiracy.

131. In October 2006, Cypress was subpoenaed by a grand jury in connection with a DOJ investigation of anti-competitive practices by chief SRAM manufacturers.

132. Cypress, IDT, Micron, NEC, Samsung, and Hitachi were members of the QDR group, which served as a cover for fixing prices.

Etron

133. Etron entered into the price-fixing conspiracy alleged in this complaint and took steps in furtherance of the conspiracy. Etron had meetings, discussions, and communications during the Class Period with NEC and Samsung, to discuss prices, supply, production capacity, and roadmaps. These acts were done as part of and in furtherance of the price-fixing conspiracy.

Hitachi

134. Hitachi entered into the price-fixing conspiracy alleged in this complaint and

1 took steps in furtherance of the conspiracy. Hitachi had meetings, discussions, and
2 communications during the Class Period with Samsung, NEC, Hynix, Micron, and Mitsubishi
3 concerning prices, supply, production capacity, and roadmaps. These acts were done as part of
4 and in furtherance of the price-fixing conspiracy.
5

6 135. Cypress, IDT, Micron, NEC, Samsung, and Hitachi were members of the QDR
7 group, which served as a cover for fixing prices.
8

9 **Hynix**

10 136. Hynix entered into the price-fixing conspiracy alleged in this complaint and took
11 steps in furtherance of the conspiracy. Hynix had meetings, discussions, and communications
12 during the Class Period with Samsung, ISSI, IDT, Micron, Mitsubishi, Cypress, Mosel Vitelic
13 concerning prices, supply, production capacity, and roadmaps. These acts were done as part of
14 and in furtherance of the price-fixing conspiracy.
15

16 137. In October 2006, Hynix was subpoenaed by a grand jury in connection with a
17 DOJ investigation of anti-competitive practices by chief SRAM manufacturers.
18

19 138. In May 2005, Hynix pled guilty to participating in a conspiracy to fix the prices
20 of DRAM, and admitted that its representatives engaged in discussions and attended meetings
21 with representatives of other DRAM manufacturers. Hynix was fined \$185 million. Four
22 Hynix executives were charged with engaging in criminal cartel activities, sentenced to prison,
23 and fined \$250,000.
24

25 139. In June 2006, Hynix was named as a defendant in a DRAM antitrust complaint
26 filed by 34 states' attorneys general. In that case, at least 19 Hynix representatives are
27 identified as having price-related discussions with competitors.
28

1 140. Hynix representatives who had responsibilities for DRAM products that were
2 the subject of the suits filed by the DOJ and the attorneys general of many States also had
3 responsibilities for SRAM products that are the subject of this suit.
4

5 **ISSI**

6 141. ISSI entered into the price-fixing conspiracy alleged in this complaint and took
7 steps in furtherance of the conspiracy. ISSI had meetings, discussions, and communications
8 during the Class Period with Hynix and Mosel Vitelic concerning prices, supply, production
9 capacity, and roadmaps. These acts were done as part of and in furtherance of the price-fixing
10 conspiracy.
11

12 142. ISSI, Toshiba, and Mitsubishi have also formed a group, and created a
13 standardized family of high-speed synchronous SRAMs (SigmaRAM) developed for
14 networking and telecommunications applications.
15

16 **Micron**

17 143. Micron entered into the price-fixing conspiracy alleged in this complaint and
18 took steps in furtherance of the conspiracy. Micron had meetings, discussions, and
19 communications during the Class Period with NEC, IDT, Samsung, Hynix, Mitsubishi, Hitachi,
20 and Cypress concerning prices, supply, production capacity, and roadmaps. These acts were
21 done as part of and in furtherance of the price-fixing conspiracy.
22

23 144. In 1997, Micron filed antidumping complaints with the International Trade
24 Commission ("ITC") with respect to SRAM imports from Korea and Taiwan. While the ITC
25 proceedings were not resolved in Micron's favor, the proceedings fostered collusion because
26 such complaints encourage both importers and domestic producers to raise prices.
27
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1 145. In October 2006, Micron was subpoenaed by a grand jury in connection with a
2 DOJ investigation of anti-competitive practices by chief SRAM manufacturers.

3 146. Cypress, Micron, NEC, Samsung, and Hitachi were members of the QDR group,
4 which served as a cover for fixing prices.

5 147. As part of a cooperation agreement announced in 2002, Micron received
6 amnesty from criminal prosecution for conspiracy in connection with the DOJ's DRAM price-
7 fixing investigation. But at least one Micron representative was still criminally charged and
8 sentenced for obstruction of justice because he withheld and destroyed documents responsive to
9 a grand jury subpoena. In November 2004, Micron's CEO, Steve Appleton, admitted that "the
10 DOJ's investigation has revealed evidence of price fixing by Micron employees and its
11 competitors on DRAM"

12 148. In June 2006, Micron was named as a defendant in a DRAM antitrust complaint
13 filed by 34 states' attorneys general. In that case, at least 19 Micron representatives are
14 identified as having price-related discussions with competitors.

15 149. Micron representatives who had responsibilities for DRAM products that were
16 the subject of the suits filed by the DOJ and the attorneys general of many States also had
17 responsibilities for SRAM products that are the subject of this suit.

18 **Mitsubishi**

19 150. Mitsubishi entered into the price-fixing conspiracy alleged in this complaint and
20 took steps in furtherance of the conspiracy. Mitsubishi had meetings, discussions, and
21 communications during the Class Period with Samsung, NEC, Micron, Hitachi, Hynix, and
22 Cypress concerning prices, supply, production capacity, and roadmaps. These acts were done
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1 as part of and in furtherance of the price-fixing conspiracy.

2 151. In October 2006, Mitsubishi was subpoenaed by a grand jury in connection with
3 a DOJ investigation of anti-competitive practices by chief SRAM manufacturers.
4

5 152. Integrated Silicon Solution Inc., Mitsubishi Electric Corporation, and Toshiba
6 Corporation were members of the SigmaRAM group, which served as a cover for fixing prices.

7 **Mosel Vitelic**

8 153. Mosel Vitelic entered into the price-fixing conspiracy alleged in this complaint
9 and took steps in furtherance of the conspiracy. Mosel Vitelic had meetings, discussions, and
10 communications during the Class Period with Samsung, Cypress, NEC, Micron, Renesas,
11 Hitachi, Toshiba, and Cypress concerning prices, supply, production capacity, and roadmaps.
12 These acts were done as part of and in furtherance of the price-fixing conspiracy.
13
14

15 **NEC**

16 154. NEC entered into the price-fixing conspiracy alleged in this complaint and took
17 steps in furtherance of the conspiracy. NEC had meetings, discussions, and communications
18 during the Class Period with Samsung, Micron, Cypress, Etron, Hitachi, Mitsubishi, Renesas,
19 and Toshiba concerning prices, supply, production capacity, and roadmaps. These acts were
20 done as part of and in furtherance of the price-fixing conspiracy.
21

22 155. In March 2006, NEC was subpoenaed by a grand jury in connection with a DOJ
23 investigation of anti-competitive practices by chief SRAM manufacturers.
24

25 156. Cypress, Micron, NEC, Samsung, and Hitachi were members of the QDR group,
26 which served as a cover for fixing prices.
27

28 ///

Renesas

157. Renesas entered into the price-fixing conspiracy alleged in this complaint and took steps in furtherance of the conspiracy. Renesas had meetings, discussions, and communications during the Class Period with Samsung, NEC, and Micron, concerning prices, supply, production capacity, and roadmaps. These acts were done as part of and in furtherance of the price-fixing conspiracy.

158. In November 2006, Renesas was subpoenaed by a grand jury in connection with a DOJ investigation of anti-competitive practices by chief SRAM manufacturers.

Samsung

159. Samsung entered into the price-fixing conspiracy alleged in this complaint and took steps in furtherance of the conspiracy. Samsung had meetings, discussions, and communications during the Class Period with NEC, Mitsubishi, Hynix, Hitachi, Etron, Cypress, Micron, Renesas, and Toshiba concerning prices, supply, production capacity, and roadmaps. These acts were done as part of and in furtherance of the price-fixing conspiracy.

160. In October 2006, Samsung was subpoenaed by a grand jury in connection with a DOJ investigation of anti-competitive practices by chief SRAM manufacturers.

161. In October 2006, Samsung's offices in Germany were raided by European Union officials as part of an investigation into suspected price-fixing of SRAM chips.

162. Cypress, IDT, Micron, NEC, Samsung, and Hitachi were members of the QDR group, which served as a cover for fixing prices.

163. In November 2005, Samsung pled guilty to participating in a conspiracy to fix the prices of DRAM, and admitted that its representatives engaged in discussions and attended

1 meetings with representatives of other DRAM manufacturers. Samsung was fined \$300
2 million. Six Samsung executives were charged with engaging in criminal cartel activities,
3 sentenced to prison, and fined \$250,000; a seventh Samsung was charged, but he remains at
4 large.
5

6 164. In June 2006, Samsung was named as a defendant in a DRAM antitrust
7 complaint filed by 34 states' attorneys general. In that case, at least 48 Samsung representatives
8 are identified as having price-related discussions with competitors.
9

10 165. Samsung representatives who had responsibilities for DRAM products that were
11 the subject of the suits filed by the DOJ and the attorneys general of many states also had
12 responsibilities for SRAM products that are the subject of this suit.
13

14 166. Integrated Silicon Solution Inc., Mitsubishi Electric Corporation, and Toshiba
15 Corporation were members of the SigmaRAM group, which served as a cover for fixing prices.

16 **Toshiba**

17 167. Toshiba entered into the price-fixing conspiracy alleged in this complaint and
18 took steps in furtherance of the conspiracy. Toshiba had meetings, discussions, and
19 communications during the Class Period with Samsung concerning prices, supply, production
20 capacity, and roadmaps. These acts were done as part of and in furtherance of the price-fixing
21 conspiracy.
22

23 168. In October 2006, Toshiba was subpoenaed by a grand jury in connection with a
24 DOJ investigation of anti-competitive practices by chief SRAM manufacturers.
25

26 169. Integrated Silicon Solution Inc., Mitsubishi Electric Corporation, and Toshiba
27 Corporation were members of the SigmaRAM group, which served as a cover for fixing prices.
28

XI. FRAUDULENT CONCEALMENT

170. Plaintiffs had no knowledge of the combination and conspiracy alleged herein, or of any facts that might have led to the discovery thereof in the exercise of reasonable diligence, prior to October, 2006 when several of the named Defendants issued press releases stating that the U.S. Department of Justice was conducting an investigation into the SRAM market.

171. Plaintiffs could not have discovered the existence of the combination and conspiracy alleged herein at an earlier date by the exercise of reasonable due diligence because of the deceptive practices and techniques of secrecy employed by the Defendants and their co-conspirators to avoid detection and, their affirmative concealment of such violations, including, without limitation, falsely attributing price increases to increased demand, shortages in supply, increased manufacturing cost, increased prices of labor and raw materials, insufficient production capacity, tightening market conditions and/or insufficient production capacity. Defendants and their co-conspirators also fraudulently informed their customers that they were unable to sell their product at a lower price due to increased demand, increased manufacturing cost, increased prices of labor and raw materials, a tightening market, and extreme shortages.

172. These false statements included, without limitation and by way of example:

a. in an email on Friday, April 12, 2002, Erik Aldana, Samsung Associate Director of Global Accounts and Sales, told fellow SRAM marketing directors when sending out an updated pricing guide that, "if any[one] argues with their pricing just tell them market has tightened and prices have increased."

b. in an article in Electronic Buyers' News on February 5, 2001, Defendants

1 attributed increased SRAM prices to increased demand due to low power
2 SRAM's strong sales. Farhad Tabrizi, vice president of worldwide marketing at
3 Hyundai Electronics America, said: "in terms of demand/supply, in the first half
4 of 2000 demand outstripped supply because demand for slow, low power
5 SRAMs has been so strong, supply has been tight." Narayan Purohit, vice
6 president of the semiconductor business at Mitsubishi Electronic, likewise
7 acknowledged tight supply in the SRAM market.

8
9
10 c. in an email on September 8, 1999 Ronald C. Herzog, of Micron, told an
11 SRAM customer that Micron was "experiencing an extreme shortage on all our
12 SRAM product line and we have been instructed to raise pricing in October and
13 beyond."

14
15 173. Plaintiffs had no reason to disbelieve these statements. Furthermore, the majority
16 of the explanations provided by Defendants involved non-public and/or proprietary information
17 completely in Defendants' control such that Plaintiffs and members of the class could not verify
18 their accuracy. Defendant's purported reasons for the price increases of SRAM were materially
19 false and misleading and were made for the purpose of concealing Defendants' anti-competitive
20 scheme as alleged herein. In truth, at all relevant times, the price of SRAM was artificially
21 inflated and maintained as a direct result of the Defendants' anti-competitive scheme, the
22 operation of which was a substantial (but undisclosed) factor in the pricing of SRAM during the
23 Class Period.
24

25
26 174. As a result of the active fraudulent concealment of the conspiracy, Plaintiffs
27 assert the tolling of the applicable statute of limitations affecting the causes of action by
28

1 Plaintiffs and the members of the class

2
3 **XII. CLAIM FOR VIOLATIONS OF 15 U.S.C. § 1**

4 175. Plaintiffs incorporate by reference all the above allegations as if fully set forth
5 herein.

6 176. Beginning in at least November of 1996, the exact date being unknown to
7 Plaintiffs and exclusively within the knowledge of Defendants, Defendants and their co-
8 conspirators entered into a continuing contract, combination or conspiracy to unreasonably
9 restrain trade and commerce in violation of Section 1 of the Sherman Act, 15 U.S.C. § 1 by
10 artificially reducing or eliminating competition in the United States.
11

12 177. In particular, Defendants have combined and conspired to raise, fix, maintain or
13 stabilize the prices of SRAM sold in the United States.
14

15 178. As a result of Defendants' unlawful conduct, SRAM prices were raised, fixed,
16 maintained and stabilized in the United States.
17

18 179. The contract, combination or conspiracy among Defendants consisted of a
19 continuing agreement, understanding and concerted action among Defendants and their co-
20 conspirators.

21 180. For purposes of formulating and effectuating their contract, combination or
22 conspiracy, Defendants and their co-conspirators did those things they contracted, combined or
23 conspired to do, including:
24

- 25 a. Participating in meetings and conversations to discuss the prices of
26 SRAM;
27
28

- b. Agreeing to manipulate prices and supply of SRAM in a manner that deprived direct purchasers of free and open competition;
- c. Issuing price announcements and price quotations in accordance with the agreements reached;
- d. Selling SRAM to customers in the United States at non-competitive prices.

181. As a result of Defendants' unlawful conduct, Plaintiffs and the other members of the Class have been injured in their businesses and property in that they have paid more for SRAM than they otherwise would have paid in the absence of Defendants' unlawful conduct.

XIII. PRAYER FOR RELIEF

WHEREFORE, Plaintiffs pray that the Court enter judgment on its behalf and on behalf of the Class herein, adjudging and decreeing that:

A. This action may proceed as a class action, with Plaintiffs as the designated Class representatives and their counsel as Class Counsel.

B. Defendants have engaged in a contract, combination and conspiracy in violation of Section 1 of the Sherman Act, 15 U.S.C. § 1, and that Plaintiffs and the members of the Class have been injured in their business and property as a result of Defendants' violations.

C. Plaintiffs and the members of the Class recover damages sustained by them, as provided by the federal antitrust laws, and that a joint and several judgment in favor of Plaintiffs and the Class be entered against the Defendants in an amount to be trebled in accordance with such laws.

D. Defendants, their subsidiaries, affiliates, successors, transferees, assignees and the respective officers, directors, partners, agents and employees thereof and all other persons

1 acting or claiming to act on their behalf be permanently enjoined and restrained from
2 continuing and maintaining the combination, conspiracy or agreement alleged herein.

3 E. Plaintiffs and members of the Class be awarded pre-judgment and post-judgment
4 interest, and that such interest be awarded at the highest legal rate from and after the date of
5 service of the initial complaint in this action;
6

7 F. Plaintiffs and members of the Class recover their costs of this suit, including
8 reasonable attorneys' fees as provided by law; and

9 G. Plaintiffs and members of the Class receive such other or further relief as may be
10 just and proper.
11

12 **XIV. JURY TRIAL DEMANDED**

13 Pursuant to Fed. R. Civ. P. 38(b), Plaintiffs demand a trial by jury of all of the claims
14 asserted in this Complaint so triable.
15

16
17 DATED: 8/31/07

COTCHETT, PITRE, & McCARTHY

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